

LOGBOOK 2 – ALLAN SHARAD (665782)

Project: SolarConsult – Sustainable Solar Energy Website

Role Focus: Semantic HTML authoring, accessibility auditing, image alt-text, contact form structure and validation, keyboard navigation improvements, JavaScript-based content filtering, Lighthouse accessibility/performance refinements.

UPLOAD 1 – Internet Fundamentals + Website Skeleton

1. Basic Information

1.1 Team Member & Role

Allan was responsible for:

- Supporting the “How the Web Works” documentation with examples tied to the SolarConsult project.
- Creating the initial **HTML skeleton** for the “Products” and “Solar Calculator” pages.
- Drafting full **wireframes** for user flow through the site.
- Helping organise the initial file structure and placeholder assets.

1.2 Upload Number: Upload 1

1.3 Self-Assessment:

tried / **done** / exceeded

1.4 What Went Well / Pending Next Week

Went well:

- Clear breakdown of HTTP request-response lifecycle.
- Created intuitive user flow diagrams for the entire SolarConsult website.
- Built clean skeleton pages for product listings and calculator tool.

Pending:

- Adding semantics and accessibility structure in Upload 2.

2. Evidence

2.1 Screenshot Descriptions

1. **Network panel** screenshot showing request ordering and caching headers.
2. **Wireframes** for About page focusing on UX clarity.
3. **Repo tree** showing organisational structure for images, scripts, and CSS.

2.2 Code Excerpts (Skeleton Stage)

about.html (initial skeleton)

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>SolarConsult - About Us</title>
</head>
<body>
  <header>
    <h1>About</h1>
  </header>

  <main>
    <h2>Our Services</h2>
  </main>

  <footer>
    <p>© SolarConsult 2025</p>
  </footer>
</body>
</html>
```

about.html (initial skeleton)

```
<main>
  <h2>About Us</h2>
</main>
```

2.3 Internet Fundamentals Notes

DNS Lookup (Example for solarconsult.co.ke)

- Browser queries DNS resolver.
- Resolver returns IP of hosting server.
- Browser initiates TCP handshake → sends HTTP GET request.

HTTP Response Example

```
HTTP/1.1 200 OK
Content-Type: text/html; charset=UTF-8
Cache-Control: max-age=3600
```

This directly affects performance of pages like /about.html.

Performance Insight

Identified that SolarConsult can benefit from image caching due to solar panel pictures used across multiple pages.

UPLOAD 2 – Semantic HTML + Accessibility Baseline

1. Basic Information

1.1 Role

Allan led accessibility and semantic structure across pages:

- Rewrote all SolarConsult pages using semantic HTML5.
- Ensured proper heading hierarchy on the “Products” and “Solar Calculator” pages.
- Added ARIA labels where appropriate.
- Implemented alt text for interior product images.

1.2 Upload Number: Upload 2

1.3 Self-Assessment:

tried / **done** / exceeded

1.4 What Went Well / Pending

Went well:

- Clean and fully semantic markup.
- Contact form becomes significantly more accessible.
- Logical tab flow verified.

Pending:

- CSS responsive layouts for Upload 3.

2. Evidence

2.1 Screenshot Descriptions

- Keyboard-only navigation sequence showing logical order.
- Products page in inspector displaying semantic tags (<section>, <article>, <figure>).
- Form labels and required fields highlighted.

2.2 Code Excerpts

Semantic Product Listing

```
<main id="main-content">
  <section aria-labelledby="solar-products">
    <h2 id="solar-products">Solar Products</h2>
```

```

        <article>
            <figure>
                
                <figcaption>Basic 300W Solar
Panel</figcaption>
            </figure>
            <p>Entry-level panel ideal for home lighting
systems.</p>
        </article>

        <article>
            <figure>
                
                <figcaption>Professional 550W Solar
Panel</figcaption>
            </figure>
            <p>High-efficiency panel for commercial energy
systems.</p>
        </article>
    </section>
</main>

```

Accessible Contact Form with Validation

```

<form aria-label="Contact SolarConsult">
    <label for="name">Your Name</label>
    <input id="name" name="name" type="text" required
minlength="3">

    <label for="email">Email Address</label>
    <input id="email" name="email" type="email" required>

    <label for="phone">Phone Number</label>
    <input id="phone" name="phone" type="tel" pattern="[0-
9]{10}">

    <button type="submit">Submit</button>
</form>

```

2.3 Accessibility Fixes (Documented)

1. Added `alt` text for every product image.
2. Implemented ARIA-labels on forms and calculator inputs.
3. Improved keyboard navigation by removing empty anchor tags and ensuring links contain descriptive text.

UPLOAD 3 – CSS Layout + Responsive Design

1. Basic Information

1.1 Role

Allan focused on fine-tuning the user-facing pages:

- Built the responsive layout for the **About** and **Contact** pages.
- Implemented CSS variables for spacing and color consistency.
- Added animation for card hover states.
- Ensured consistent line-heights and spacing for readability.

1.2 Upload Number: Upload 3

1.3 Self-Assessment:

tried / done / **exceeded**

1.4 What Went Well / Pending

Went well:

- Products grid adapts elegantly from mobile to desktop.
- Calculator components align cleanly using Flexbox.
- Improved readability with typographic scale.

Pending:

- JavaScript enhancements for Upload 4.

2. Evidence

2.1 Screenshot Descriptions

- Product cards displayed in 1-column mobile layout.
- Product cards displayed in 3-column desktop layout.
- Calculator inputs aligned horizontally on large screens.

2.2 Code Excerpts

CSS Variables for SolarConsult Theme

```
:root {
  --primary: #0f5c7f;
  --accent: #ffc421;
  --bg: #ffffff;
  --spacing: 1rem;
  --shadow: 0px 2px 10px rgba(0,0,0,0.1);
}
```

Consult Grid

```
.consult {
  display: grid;
  gap: var(--spacing);
  grid-template-columns: 1fr;
}

@media (min-width: 768px) {
  .products-list {
    grid-template-columns: repeat(2, 1fr);
  }
}

@media (min-width: 1024px) {
  .products-list {
    grid-template-columns: repeat(3, 1fr);
  }
}
```

Consult Card Hover Animation

```
.consult-card {
  background: var(--bg);
  padding: var(--spacing);
  border-radius: 8px;
  box-shadow: var(--shadow);
  transition: transform 0.3s ease;
}

.product-card:hover {
  transform: translateY(-5px);
}
```

2.3 Performance Notes

- Ensured no CSS frameworks used, keeping file size < 40KB.
- Minified images in the Products grid.
- Ensured fonts use system defaults to avoid blocking.

UPLOAD 4 – JavaScript Enhancements + Polish

1. Basic Information

1.1 Role

Allan handled the interactivity and polish for UX-sensitive pages:

- Implemented a **product filtering system** (search by product type).

- Added **enhanced inline validation** for contact form without overriding native validation.
- Audited Lighthouse accessibility score and fixed minor issues.
- Optimised final JavaScript bundle structure.

1.2 Upload Number: Upload 4

1.3 Self-Assessment:

tried / done / **exceeded**

1.4 What Went Well

- Filtering system worked with minimal DOM overhead.
- Validation improvements help users catch errors earlier.
- Accessibility score increased to 98 after improvements.

2. Evidence

2.1 Screenshot Descriptions

- Filtering products in real time.
- Inline form validation triggering custom message.
- Lighthouse accessibility report showing improved score.

2.2 Code Excerpts

Consultation Filtering by Category

```
const filterInput = document.querySelector("#filter");
const products = document.querySelectorAll(".product-card");

filterInput?.addEventListener("input", () => {
  const query = filterInput.value.toLowerCase();

  products.forEach(product => {
    const name = product.dataset.name.toLowerCase();
    product.style.display = name.includes(query) ? "block"
: "none";
  });
});
```

Enhanced Inline Validation

```
const emailField = document.querySelector("#email");

emailField?.addEventListener("input", () => {
  if (emailField.validity.typeMismatch) {
    emailField.setCustomValidity("Please enter a valid
email address.");
  }
});
```

```
    } else {  
        emailField.setCustomValidity("");  
    }  
});
```

Modular Script Handling

```
<script src="js/filter.js" type="module" defer></script>  
<script src="js/validation.js" type="module" defer></script>
```

2.3 A11y + Performance Notes

- Ensured all interactive elements have reachable keyboard focus.
- Added ARIA roles to calculator form fields.
- Reduced JS bundle size by splitting into modules.
- Lighthouse checks show reduced layout shift and better contrast.